

ELABORATIONS

News and Issues for Washington's Clinical Laboratories

Volume VIII Issue 5

May - June 2003

Bioterrorism Update

by Candace Bunch

This issue of Elaborations contains important information for laboratories about bioterrorism. It outlines some of the changes made to terminology by the Centers for Disease Control and Prevention (CDC); provides information about bioterrorism training opportunities at the Washington State Public Health Laboratories (PHL); and contains a practice guideline developed by the Washington State Clinical Laboratory Advisory Council for the management of a bioterrorism event in the clinical laboratory.

The **Laboratory Response Network for Bioterrorism (LRN)** is a multilevel system developed by CDC to link state and local public health laboratories with clinical, military, veterinary, agricultural, water, and food-testing laboratories for an efficient and quick response to a bioterrorism event.

The LRN system includes:

- **Sentinel** laboratories (formerly Level A clinical laboratories) that will perform essential RULE OUT and referral functions.
- **Reference** laboratories (formerly Level B and C clinical laboratories) that will perform confirmatory testing.
NOTE: A **Reference** laboratory in this context is a laboratory specifically authorized by CDC to perform testing to RULE IN the bioterrorism agent. This is not to be confused with the laboratory to which you refer routine diagnostic testing samples.
- **National** laboratories (formerly Level D laboratories) that can provide the highest containment level for any additional technical support.

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Any clinical laboratory that cultures diagnostic specimens is a LRN Sentinel laboratory. These laboratories and the clinicians they serve may be the first to recognize and respond to a covert bioterrorism event. Thus, it is imperative that an understanding is achieved in every laboratory regarding the risks in handling these agents and that procedures are in place to **RULE OUT** a possible bioterrorism agent.

Bioterrorism Event Management Guideline: A critical aspect of a quick response during a bioterrorism event is good communication. To clarify the proper reporting mechanism for clinical laboratories, the Clinical Laboratory Advisory Council developed a bioterrorism event management practice guideline called the "**Clinical Laboratory Suspected Bioterrorism (BT) Event Management Guideline**". This guideline provides information in an easy-to-follow flow diagram format for each **LRN Sentinel** clinical laboratory that includes:

- Information about covert and overt bioterrorism events;

continued on page 2

Practice Guidelines

The following practice guidelines have been developed by the Clinical Laboratory Advisory Council. They can be accessed at the following website:
www.doh.wa.gov/lqa.htm

Anemia	Lipid Screening
ANA	Point-of-Care Testing
Bioterrorism Event Mgmt	PSA
Bleeding Disorders	Renal Disease
Chlamydia	STD
Diabetes	Thyroid
Group A Strep Pharyngitis	Tuberculosis
Hepatitis	Urinalysis
HIV	Wellness
Intestinal Parasites	

Bioterrorism Update, continued from page 1

- Proper notification for laboratory management, the clinician, and the Local Health Jurisdiction about preliminary laboratory findings suggestive of a bioterrorism agent;
- The key role that the Local Health Jurisdiction plays in determining the next steps once a **LRN Sentinel** laboratory has a preliminary finding suggestive of a bioterrorism agent. **NOTE:** The Local Health Jurisdiction will communicate with the Washington State Department of Health Epidemiology and Public Health Laboratories staff to determine which **LRN Reference** laboratory will have the capacity to handle the specimen. This information will be provided to the **LRN Sentinel** laboratory;
- An area to record critical phone numbers for your facility and county;
- A reference table for bioterrorism agent identification;
- A reference chart listing the contact phone numbers for each Local Health Jurisdiction in Washington is included in this issue of Elaborations on page 3.

PHL Training for Bioterrorism: Under the auspices of the Laboratory Response Network for Bioterrorism (LRN), the Washington State Public Health Laboratory is

“ELABORATIONS” is a free monthly publication of the Washington State Department of Health (DOH) Public Health Laboratories (PHL) and Office of Laboratory Quality Assurance (LQA).

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Shoreline, WA 98155

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NOTE: Letters to the editor may be published unless specified otherwise by the author.

Website addresses:

DOH home page: <http://www.doh.wa.gov>
LQA home page: <http://www.doh.wa.gov/lqa.htm>
PHL home page:
<http://www.doh.wa.gov/EHSPHL/PHL/default.htm>

providing bioterrorism training for **LRN Sentinel** laboratories in the State of Washington. These classes provide a wet laboratory environment with lectures on the biochemical and clinical characteristics of organisms currently targeted as possible agents of bioterrorism and will provide the necessary information you will need to **RULE OUT** a bioterrorism agent.

Recognizing these agents of bioterrorism will provide an additional safety factor for laboratory staff responsible for culturing specimens. Safety issues in handling these organisms will also be addressed.

LRN Sentinel Laboratory Training: June 11 or June 12, 9:00 am to 5:00 pm, Public Health Laboratory, Shoreline, WA. Additional classes will be held in other areas of Washington in the fall. Announcements of additional classes will be published in future editions of Elaborations.

COURSE CONTENT:

- The role of LRN Sentinel laboratory (any laboratory that reads microbiology cultures in their facilities)
- The Laboratory Response Network
- Chain of custody procedures
- Washington State Department of Health Notification procedures
- Biochemical and clinical information on Tularemia, Anthrax, Smallpox, Botulinum Toxin, Brucellosis, and Plague
- Wet laboratory exercises in the identification of BT agents
- Smallpox specimen collection procedures
- Safety in the laboratory: proper use of biosafety hoods, overview of laboratory acquired infections, safety review for the small laboratory.

For registration information, contact Margaret Hoff at PHL.training@doh.wa.gov or (206) 361-2820.

**Any clinical laboratory
that cultures diagnostic
specimens is a LRN
Sentinel laboratory.**

Local Health Department Notifiable Condition Contacts

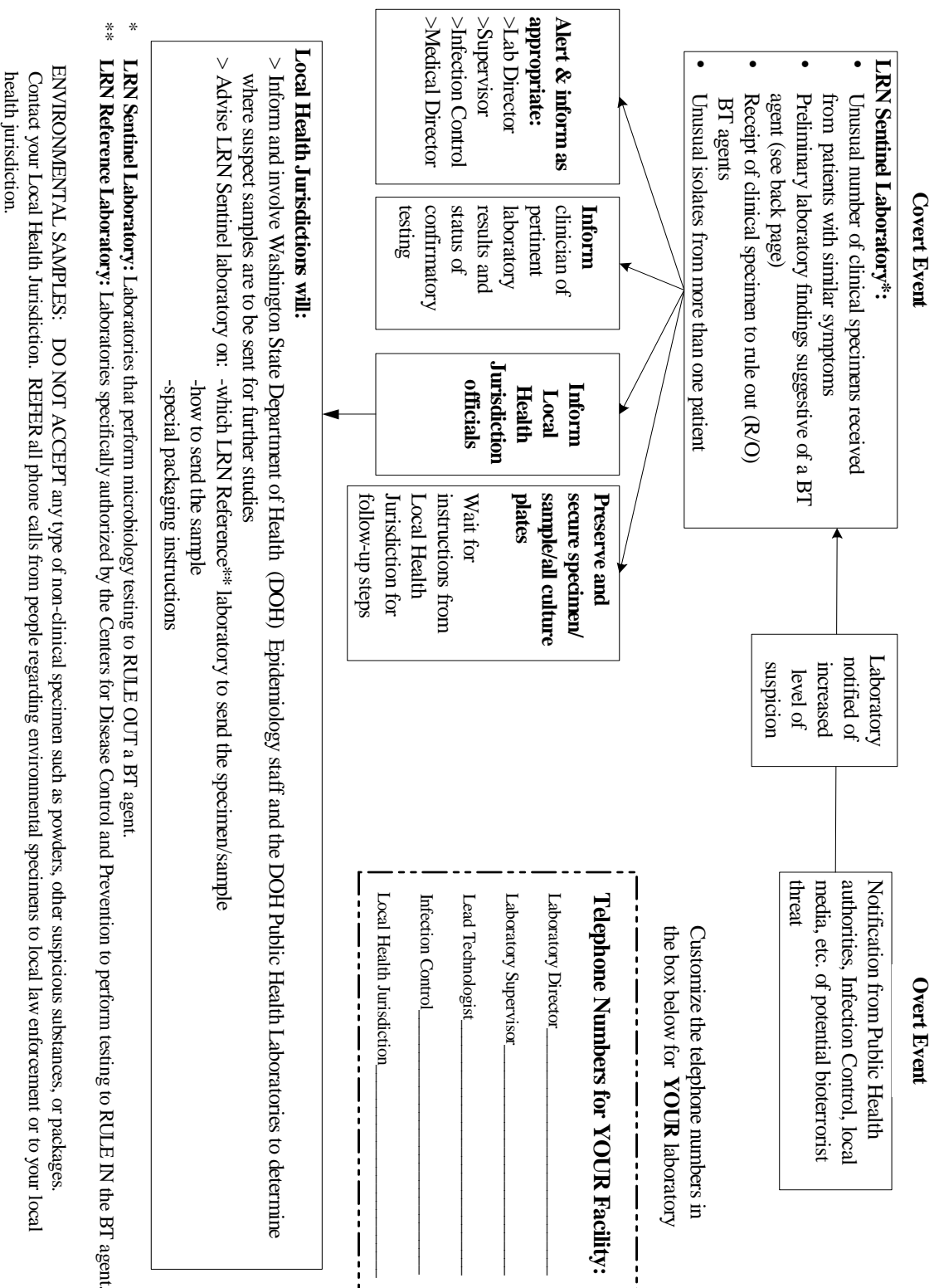
<u>LOCAL HEALTH JURISDICTION</u>	<u>PHONE</u>	<u>FAX</u>
Adams County Health District	509-659-3315	509-659-4109
Asotin County Health District	509-758-3344	509-758-8454
Benton-Franklin Health District	509-547-9737	509-543-3323
Bremerton-Kitsap County Health District	360-337-5235	360-337-5298
Chelan-Douglas Health District	509-886-6400	509-886-6478
Clallam County Health Department	360-417-2439	360-417-2519
Columbia County Health District	509-382-2181	509-382-2942
Cowlitz Health District	360-414-5599	360-425-7531
Garfield County Health District	509-843-3412	509-843-1935
Grant County Health District	509-754-6060	509-754-0941
Grays Harbor Health Department	360-532-8631, x252	360-533-6272
Island County Health Department	360-679-7351	360-679-7347
Jefferson County Health Department	360-385-9400	360-385-9401
Kittitas County Public Health Department	509-962-7582	509-962-7581
Klickitat County Health Department	509-773-4565	509-773-5991
Lewis County Dept. of Human Services	360-740-1275	360-740-1472
Lincoln County Health Department	509-725-9213, x 31	509-725-1014
Mason County Health Department	360-427-9670, x400	360-427-7787
Northeast Tri-County Health District	509-684-1301	509-684-1002
Okanogan County Health District	509-422-7140	509-422-7384
Pacific County Health Department	360-875-9343	360-875-9323
Public Health Seattle & King County (HIV/AIDS)	206-296-4645	206-205-5281
Public Health Seattle & King County (STDs)	206-731-3954	206-731-4151
Public Health Seattle & King County (TB)	206-731-4579	206-731-4350
Public Health Seattle & King County (Other CDs)	206-296-4774	206-296-4803
Public Health Seattle & King County (After Hours)	206-296-4782	
San Juan County Health Department	360-378-4474	360-378-7036
Skagit County Health Department	360-336-9380	360-336-9401
Snohomish County Health District	425-339-5225	425-339-5217
SW Washington Health District	360-397-8215	360-397-8424
Spokane County Health District	509-324-1569	509-324-3623
Spokane County Health District (STDs)	509-324-1609	
Tacoma-Pierce County Health Department	253-798-6410	253-798-7666
Tacoma-Pierce County Health Department (After Hours)	253-798-2987	
Thurston County Health Department	360-786-5470	360-786-5594
Wahkiakum County Health Department	360-795-6207	360-795-6143
Walla Walla Health Department	509-527-3290	509-327-3264
Whatcom County Health Department	360-738-2503	360-676-7646
Whitman County Health Department	509-397-6280	509-397-6239
Yakima County Health District	509-575-4040, #8	509-575-7894



If no one is available at the local health jurisdiction and a condition is
Immediately Notifiable, please call
(877) 539-4344

CLINICAL LABORATORY SUSPECTED BIOTERRORISM (BT) EVENT MANAGEMENT GUIDELINE

Washington State Clinical Laboratory Advisory Council
April 2003



LRN SENTINEL LABORATORY REFERENCE TABLE

Agent	Culture Methods	Incubation Methods	Recovery Time	Colonial Morphology	Gram Stain Morphology	Preliminary Identification Tests	Action
<i>Bacillus anthracis</i> From: vesicle, sputum, CSF, blood, stool, rectal swab	Blood, Chocolate agar No growth on Mac	35°C in ambient air or CO ₂	8-24 hours	Non-hemolytic, gray colonies with ground glass appearance which "peaks" when touched	Large gram positive rods, oval, sub-terminal spores, no swelling of cell., capsules may be seen from specimen Gram stained	Catalase—positive Motility—negative	Refer to Laboratory designated by the local health jurisdiction
<i>Francisella tularensis</i> From: Blood, tissue, sputum, lymph nodes	Chocolate, BCYE, Thioglycollate, and Thayer-Martin agar Poor growth on BA No growth on Mac	35°C in CO ₂	~24-48 hours Hold up to 10 days	Very small, blue/gray colonies	Tiny gram negative coccobacilli poorly staining	Catalase—negative or weakly positive Oxidase—negative Urea—negative Motility—negative XV strip—no satelliting	Refer to Laboratory designated by the local health jurisdiction
<i>Yersinia pestis</i> From: Lymph node, blood, spleen, liver, sputum, bubo	Grows on routine culture media	22-28°C in ambient air or CO ₂	Grows slowly, 24-48 hours	Small, fried egg colonies may look like beaten copper	Gram negative rods which may show bi-polar staining	Catalase—positive Oxidase—negative Urea—negative Motility—negative TSI—weak acid slant, no change in butt	Refer to Laboratory designated by the local health jurisdiction
<i>Brucella sp.</i> From: Blood, bone marrow, tissue, CSF	Blood, Chocolate, Thayer-Martin or BCYE agar Some strains grow on Mac	35°C in CO ₂	Normally 24-72 hours, may take up to 30 days	Small, gray/white colonies, punctate	Small gram negative coccobacilli, poorly staining	Catalase—positive Oxidase—positive Urease—positive XV—negative	Refer to Laboratory designated by the local health jurisdiction
<i>Clostridium botulinum</i> From: Feces, tissue, wound exudates, gastric contents	Blood or brucella agar Chopped meat Broth	Anaerobic incubation at 35°C	24-30 hours	Beta hemolytic with rhizoid colonies on moisture-free media; always swarms on damp media	Gram positive rods with oval, sub-terminal spores which swells the cell	Catalase—negative Indole—negative	Refer to Laboratory designated by the local health jurisdiction
<i>Burkholderia pseudomallei</i> & <i>mallei</i> From: Blood, sputum, wounds	Grows on routine culture media, strongly lactose + on Mac	35°C in ambient or CO ₂	24 hours <i>B. mallei</i> grows more slowly	Creamy tan to orange wrinkled colonies when old, fresh isolate may look like mercury	Gram negative rods similar to Pseudomonas	Catalase—positive Oxidase—positive <i>B. mallei</i> - var. oxidase/non-motile	Refer to Laboratory designated by the local health jurisdiction

References:

1. **Basic Diagnostic Testing Protocols for Level A Laboratories** (updated: December 18, 2002). Centers for Disease Control and Prevention, American Society for Microbiology, and the Association of Public Health Laboratories.
2. **Biological and Chemical Terrorism: Strategic Plan for Preparedness and Response**. CDC MMWR Volume 49/No.RR-4, April 21, 2001.
3. **Manual of Clinical Microbiology**, 7th ed., American Society for Microbiology, 1999, Patrick R. Murray, editor-in-chief.
4. **USAMRIID's Medical Management of Biological Casualties, Handbook 4th ed.** February, 2001 – Appendix E.

Waived Testing Helpful Hints

In the previous issue, we discussed Good Laboratory Practice (GLP) #7: Repeat the test if there is a problem. Here is GLP #8: Accurately record results.

What does this mean?

- ✓ Be sure that the results are correctly recorded on the report and/or the patient's chart.
- ✓ Record the results according to the manufacturer's instructions in the package insert.
- ✓ It is also good laboratory practice to write the test results on a log as a backup in case the report is lost or misplaced.

NOTE: Check this spot in future editions of *Elaborations* for more helpful hints with waived testing.

Calendar of Events

PHL Training Classes:

Sentinel Laboratory Training	
June 11	Shoreline
June 12	Shoreline

Northwest Medical Laboratory Symposium

October 22-25	Olympia
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10th Annual Clinical Laboratory Conference

November 10	Seattle
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WSSCLS/NWSSAMT Spring Meeting

April 2004	Vancouver
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Contact information for the events listed above can be found on page 2. The Calendar of Events is a list of upcoming conferences, deadlines, and other dates of interest to the clinical laboratory community. If you have events that you would like to have included, please mail them to *ELABORATIONS* at the address on page 2. Information must be received at least one month before the scheduled event. The editor reserves the right to make final decisions on inclusion.